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MEMORANDUM

DATE: July 29, 2014

TO: Monica Tonel, Task Monitor, EPA, Region 10, Seattle, WA,
Mail Stop ECL-112

FROM: Linda Ader, START-3 Project Leader, E & E, Seattle, WA LEA

SUBJ: Site Recommendations
Freeman Ground Water Contamination
Freeman, Washington

REF: Contract Number: EP-S7-13-07
Technical Direction Document Number: 13-07-0005

A Site Inspection (SI) was conducted of the Freeman Ground Water Contamination site in response to detections of carbon tetrachloride in the Freeman School District's primary drinking water well. This well is used as the sole source of potable water to the Freeman School Campus which contains a pre-school, elementary, middle, and high school. The concentrations of carbon tetrachloride that have been detected in this well have exceeded the EPA Safe Drinking Water Act Maximum Contaminant Level of 5 micrograms per liter on multiple occasions. Approximately 900 people use this well for drinking water.

In January 2013, chloroform (a degradation product of carbon tetrachloride) also was detected in this well; and both carbon tetrachloride and chloroform were detected in a nearby former residential well.

The town of Freeman has few residences and is dominated by the Freeman School District school campus. The Freeman Store is present on the north end of town. An active Cenex Harvest States grain handling facility with eleven steel grain silos/bins and one steel grain elevator is present between State Route 27 and a Union Pacific Railroad line which roughly parallels the highway. The Old Freeman Clay Pit, former clay barrow pit, is located approximately 0.5 mile northeast of the former Cenex Harvest States grain handling facility and a former brick kiln is present on the southeastern end of town. Beyond these uses, land near Freeman is primarily used for agricultural production.

Carbon tetrachloride is a manufactured chemical that does not occur naturally. Carbon tetrachloride is a multi-purpose chemical that was used as a degreasing solvent for industrial and domestic purposes, as a fire suppressant, as a cleaning agent for dry cleaning, in making nylon, and for many years was used as a fumigant in grain operations throughout the Midwest. Due to its toxicity, most of these uses were discontinued in the mid-1960s. Until 1986, the largest source of releases to the environment of carbon tetrachloride was from its use as a grain fumigant.

The SI included field and fixed laboratory analysis of soil samples. The samples collected consisted of subsurface soil samples from the Cenex Harvest States grain handling facility, upgradient subsurface soil samples from the property containing the Old Freeman Clay Pit, and ground water samples from wells owned by the Freeman School District. Additionally, background samples for all matrixes were collected.

Subsurface soil analytical results revealed the presence of carbon tetrachloride and chloroform at significant concentrations relative to background concentrations at the Cenex Harvest States grain handling facility. The presence of these contaminants also was confirmed in the primary Freeman School District well and in an out-of-use Freeman School District well. Prior to the SI field event, a treatment system designed to remove contaminants from drinking water had been installed on the drinking water distribution system to prevent further exposure of the campus population.

Based on these findings, the information contained in the *Freeman Ground Water Contamination Site Inspection* report, and the accompanying preliminary Hazard Ranking System Site Score, the START-IV recommends further investigation of this site under the Comprehensive Environmental Response, Compensation, and Liability Act.

If you have any questions regarding this memorandum, please call me at 206-624-9537.